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AUTHOR Malott, Richard W.; And Others
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ABSTRACT

The Student Centered Education Project is an experimental college program run by and for psychology students at Western Michigan University. The project was initiated in the fall of 1969 by faculty of various departments within the university, with the aim of developing a more effective learning environment for the students. The faculty initially carried the major responsibility for operating and refining the program. Recently, however, students began taking a more active interest in the operation of the project until today, students not only run the project, but provide the major force for innovative change. The faculty have assumed the role of consultants, allowing students to carry the responsibility for further development and improvement of the program. Undergraduate student researchers have been hard at work developing new methods of remediation, small group seminars, procedures for monitoring staff performance, a supportive social environment for serious students, and other components of a comprehensive educational program. We have found that students, when provided with proper training and given the opportunity, are very capable of operating and continually improving an innovative educational program. (Author)

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THE STUDENT CENTERED EDUCATION PROJECT:

STUDENT INITIATIVE IN THE BEHAVIOR ANALYSIS

EXPERIMENTAL EDUCATION PROJECT*

Chair: Richard W. Malott

Participants: Thomas Welsh
Carol Sundberg
Roger Coates
Kathleen Guziak
Paul Smith
Mary Tillema
Thomas Zmolek
Harvey Jacobs
Susan Gillison
David Byington

*A Symposium presented at the 1975 Convention of the Midwestern Association of Behavior Analysis

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The Student Centered Education Project, more concisely called SCEP, originated in the fall of 1969, through the combined efforts of the Psychology, Management, and Philosophy Departments at Western Michigan University. The goal of the project was to create a more effective learning environment for the students.

At that time SCEP was a two semester interdisciplinary program offering courses in Psychology, Management, Philosophy, and General Studies. The 25 students enrolled were taking all of their courses for that semester within SCEP.

Classes met daily...students studied at the Study Center...whenever possible programmed textbooks and study objectives were used...and a Teaching Apprentice was available at all times to answer questions and help with difficult concepts.

Faculty luncheon lectures and weekly SCEP government meetings were other major components of the original SCEP.

In addition, many of the students were living in the SCEP dormitory, then two houses located off-campus. Because these students were, so to speak, sleeping, eating, and studying together they developed a strong sense of community.

The project demonstrated that with the use of some simple systems analysis and contingency management, a learning environment could be developed in which the students would work harder, learn more, and be "happier".

After the first few semesters of SCEP's existence, a number of the special components were gradually eliminated. For the sake of immediate convenience and various other reasons, students were no longer required to take all of their semester's work within SCEP. The off-campus dormitory program and weekly

SCEP government meetings were also discontinued. Although most of the students were still taking all the courses SCEP had to offer, they were doing so over a greater number of semesters. Fewer and fewer students were taking an active interest in the improvement of the program which resulted in a decline in the "sense of community" that was originally an important aspect of SCEP.

A number of good courses were still being effectively taught, however, very few innovative changes were taking place and SCEP had lost much of its importance as an experimental college program.

Therefore, a number of students, with the help of Dr. Malott, resolved to revise and revive SCEP as a viable force in educational innovation.

SCEP is still a two semester program, Teaching Apprentices are still an important part of the project, and programmed textbooks and study objectives are still being used. Many of the other components, however, have been changing and improving since the initiation of the project.

We now teach courses only in Psychology, six credits in the first semester and twelve credits in the second semester. An elementary animal laboratory is an important part of the first semester's package while an applied lab either as a Teaching Apprentice in an introductory course in Psychology or as a therapist at the Kalamazoo Valley School for the Severely Mentally Impaired is an important part of the second semester's work.

The SCEP dormitory has been reinstituted...but this time in one of the dormitories on campus.

We have been experimenting with various methods of remediation, new systems for monitoring staff performance, student projects in self-control and other aspects of operating an innovative educational program.

We would like to tell you a little about some of the things that we are into at this time.

THE DEVELOPMENT OF EFFECTIVE REMEDIAL PROCEDURES

I'm sure most of us would agree that ideally, upon completion of any course, all students should have acquired a high level of mastery over the presented material. Unfortunately, in most traditional courses only a few students achieve this standard of excellence. Most educators set a specified pace for presenting new material, and subsequently leave behind students who have not mastered the prior and perhaps prerequisite concepts.

In the fall of 1974, SCEP set out to evaluate various procedures which seemed to facilitate mastery of course material. These procedures were designed with the primary objective of helping all students master all of the concepts presented to them. Initially, a weekly remedial session was implemented in conjunction with an instructor paced system. At the end of every week a remedial quiz was given covering material which was not mastered by the majority of the students. In order to objectively measure which students needed this further review, weekly quiz points were used as a representation of conceptual mastery. Students who had failed to earn at least 90% of the total weekly points, were required to attend the remedial session and take the remedial quiz.

In terms of what would best fit the academic needs of the students, we realized that the weekly remedial quiz could not allow each student an opportunity to overcome individual difficulties with course material. In one section of SCEP we attempted to deal with this problem. A small group of students participated in a self paced, unit mastery procedure. These students were not randomly chosen, since our objective was simply to work out the details of this procedure, and the problems encountered when adapting it to the overall SCEP system.

The unit mastery procedure required students to master a unit of material before progressing to the next unit. To master a unit meant to correctly answer enough questions to earn 90% of the points possible on the unit quiz. The procedure was self paced in that students could progress as quickly as they wanted, however, they were required to complete a minimum amount of work each week so that they did not fall behind. If students did not keep up with the minimum rate of progress, they were to be asked to drop this procedure and continue with the regular SCEP procedure.

As it turned out, no students fell behind in their work, and upon evaluating the "minimum rate of progress" all students agreed that they had no difficulty keeping up with it. Based on evaluations from students and staff we decided to retain the self pacing aspect of this system, and put unit mastery through a more rigorous test.

In the winter of 1975, all procedures within SCEP were redesigned so that they would be conducive to a more personalized system of instruction. A procedure was then implemented which allowed students to progress as quickly as they wanted, while requiring a minimum amount of work to be completed each week. In conjunction with this self paced design a group of volunteers participated in a unit mastery procedure. This procedure required students to master their units before progressing to the next unit. Again, to master a unit meant to correctly answer enough questions to earn 90% of the points possible on the unit quiz.

Participants in this procedure were randomly assigned to one of two groups. Differential treatment of either group was kept to a minimum. The standard ABA design was put into effect for each group. While one group was required to master their units, the other group was not. Periodically the procedures were reversed so that both groups had overall an equal amount of units to master.

The general results of this unit mastery procedure did not show a significant improvement in overall course performance. However, in evaluating the effectiveness of any system, satisfaction of the participants is a major consideration. Students who particpated in the unit mastery procedure felt that it was effective in that it provided them with additional opportunities to overcome difficult aspects of the material. When given the choice, students chose the unit mastery procedure in combination with self pacing over a self paced design with no mastery criterion. Students also found that they had no difficulty keeping up with their work even though they had to master their units.

In conjunction with a self paced design, unit mastery presented minimal problems. Once our system was redesigned so that students could progress at their own pace, mastering of units provided a more individualized method of instruction.

THE EFFECTS OF GRADUAL CHANGE FROM
MULTIPLE CHOICE TO ESSAY QUIZ QUESTIONS
ON SUBSEQUENT QUIZ SCORES AND VERBAL COMMENTS

The Student Centered Education Project, SCEP I, teaches two introductory psychology courses. SCEP devotes half of the semester, 7½ weeks, to each course.

SCEP I in the past used multiple choice questions for the first course and abruptly changed to short answer essay questions in the second course. The abrupt change in quiz format was a difficult transition for the students to make. For example, quiz scores abruptly decreased and vocal complaining increased when the quiz format was changed.

The present study was designed to determine the effect of gradual change from mulitple choice questions to essay questions on quiz scores and verbal comments.

Subjects chosen were 25 undergraduate students in SCEP, ten comprising the control group and 15 comprising the experimental group. A total of 15 quizzes were administered in each of three phases. During Phase I, both the experimental and control groups took the same ten point multiple choice quizzes.

INSERT FIGURE 1 ABOUT HERE

The control group's mean for these quizzes were 9.26 points out of ten, and the experimental group's mean was 9.44 points.

In Phase II, the experimental group's quiz questions were gradually changed from 10% to 100% short answer essay questions while the control group continued taking multiple choice quizzes. The experimental group's mean was 9.32 points out of ten while the control group's mean was 9.01 points out of ten.

During Phase III both groups took the same ten point short answer essay quizzes. Comparing the quiz scores of Phase I and Phase III, the control group's

quiz score mean decreased .35 points and the experimental group's mean decreased .91 points.

The present study found that the experimental group's mean quiz scores were lower in Phase III than that of the control group; .57 points lower. Two problems probably account for these results: 1. The teaching apprentice graders were not blind to the study conducted, and 2. The teaching apprentice graders varied in their grading of the quizzes. In the grading of the same quiz by the different teaching apprentices, points awarded varied from four to six. Some graders indicated that they graded the experimental group more strictly than the control group in Phase III. The graders expected the experimental group to answer the questions more correctly due to their past experience with essay questions.

A recommendation for a future study would be to grade the quizzes on a blind basis. Grading blind would mean that the graders would be naive to the experimental situation to guard against awarding points due to section or name.

In Phases II and III verbal behaviors were observed and recorded using a sampling technique. A total of 87 vocalizations were recorded and categorized into one of the following areas: negative or positive comments concerning the class, and negative or positive comments concerning the quiz.

INSERT FIGURE II ABOUT HERE

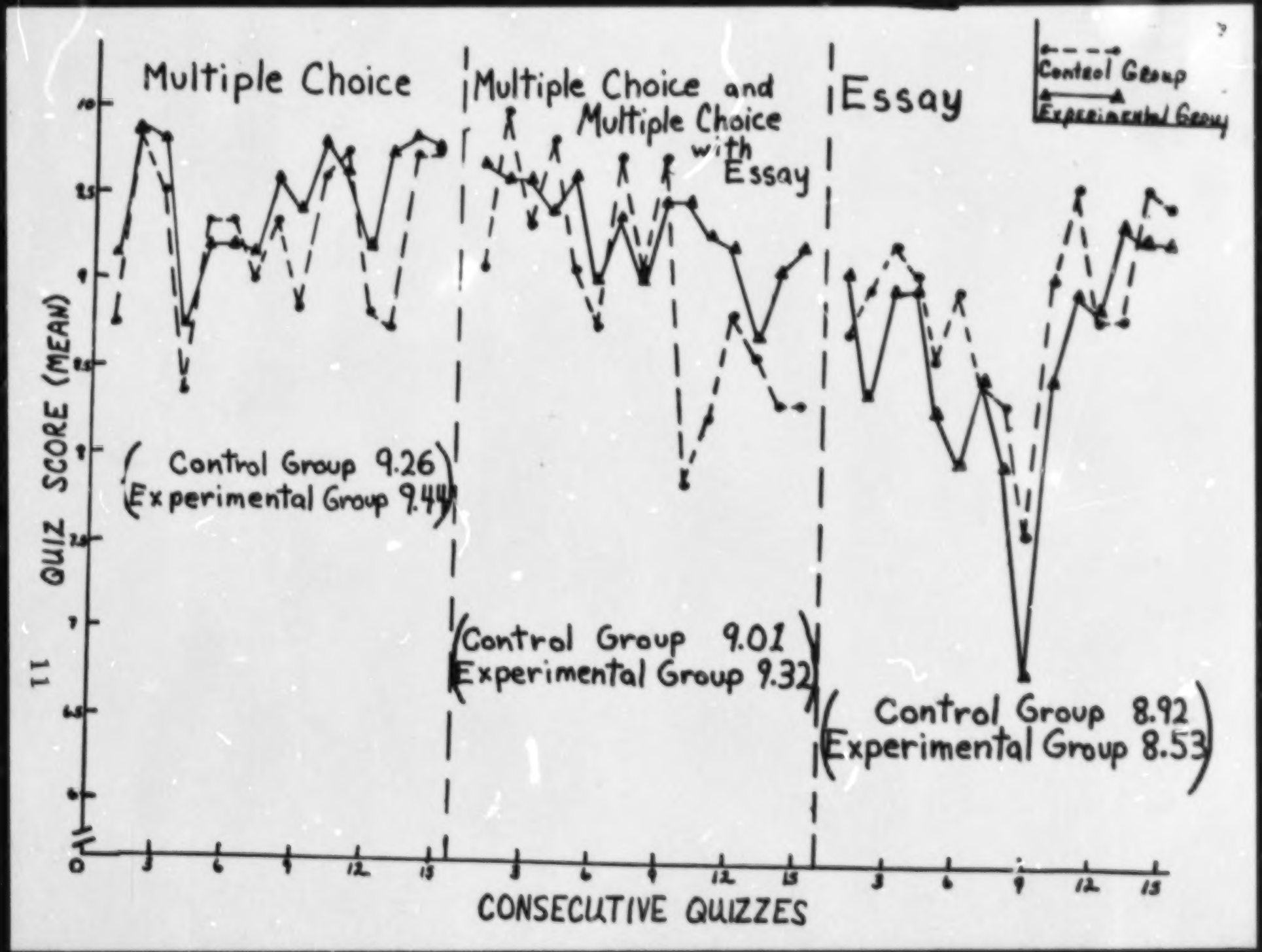
Phase II, showed more positive quiz and positive class comments in the control group than in the experimental group. The experimental group had a higher number of negative quiz comments. Both groups had approximately the same number of negative class comments.

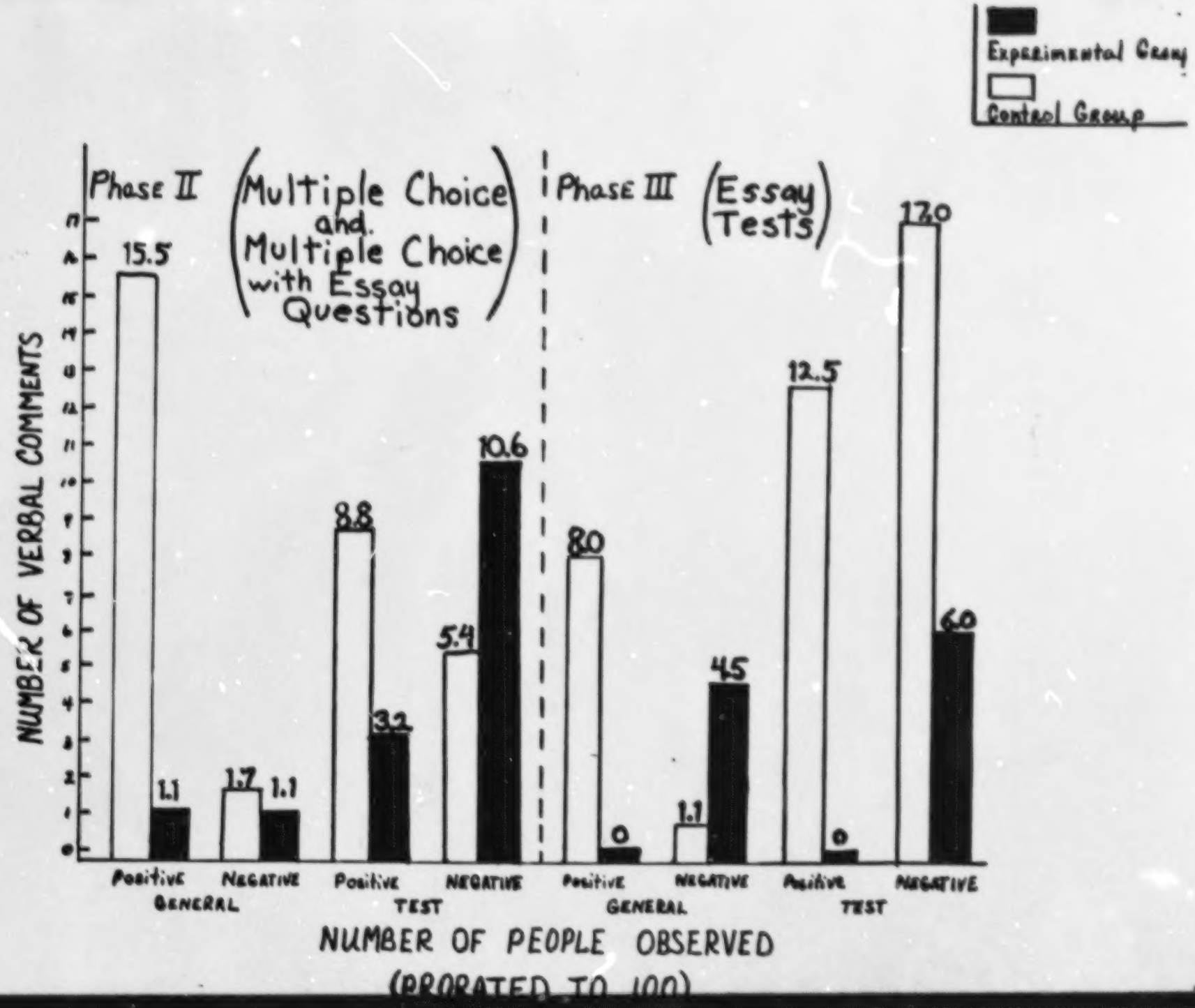
In Phase III, essay questions, negative class comments remained the same in the control group while positive class comments decreased. Both positive

and negative quiz comments increased. The experimental group showed a slight decrease in both class and quiz positive comments, and an increase in class negative comments. However, there was a decrease in negative quiz comments. A 4.6 decrease in negative quiz comments occurred in the experimental group while in the control group negative quiz comments increased 11.6.

If aversion to a quiz is measured in terms of a student's verbal comments about the quiz, then this study indicated that gradually changing the quiz format was less aversive to the students. This data was also interesting in the fact that students in the experimental group found the essay quizzes less aversive than the control group even though the experimental group was receiving lower quiz scores compared to the control group. This study, however, did not show a decrease in negative class comments in the experimental group in Phase III, or an increase in negative class comments in the control group in Phase III. Positive class and quiz comments also did not increase in the experimental group for this phase.

A recommendation for a future study would be to provide students with a study guide on how to write answers to essay questions, and to provide a study workbook. The purpose of the workbook would be to allow students to practice writing essay answers prior to taking a quiz. It remains to be determined if this would sufficiently maintain high quiz scores.


Multiple Choice
Multiple Choice and Multiple Choice with Essay
Essay
Control Group
Experimental Group
QUIZ SCORE (MEAN)
Control Group 9.26
Experimental Group 9.44
Control Group 9.01
Experimental Group 9.32
Control Group 8.92
Experimental Group 8.53
CONSECUTIVE QUIZZES


Experimental Group
Control Group
Phase II
(Multiple Choice and Multiple Choice with Essay Questions)
Phase III
(Essay Tests)
NUMBER OF VERBAL COMMENTS
15.5
1.1
1.7
1.1
8.8
3.2
5.4
10.6
8.0
0
1.1
4.5
12.5
0
17.0
6.0
Positive
NEGATIVE
Positive
NEGATIVE
Positive
NEGATIVE
Positive
NEGATIVE
GENERAL
TEST
GENERAL
TEST
NUMBER OF PEOPLE OBSERVED
(PRORATED TO 100)

SCEP I SEMINARS

In SCEP I students study the elements of behavior change during regular class periods and practical applications in the alteration of human behavior at weekly seminars. In that the theme of these seminars is "Behavior Modification at Large" such topics are entertained as behavior modification in education, the operant contract and mental retardation, contingency management in business and industry, self-modification programs, and issues in the behavioral engineering of an entire society. The materials used are those which have proven pertinent and interesting in past seminars and include such items as Sidney Bijou's "The Mentally Retarded Child", Brethower's diagrammatic Total Performance System, Carol Foster's Developing Self Control, and Walden Two by B. F. Skinner. There are a number of objectives and discussion topics included with each assignment which are designed to guide students as they read the material; prompt student interactions during and outside the class; and provide models from which students are encouraged to derive their own relevant issues.

The individual assignments are reviewed by seminar teaching apprentices (T.A.'s) during Sunday staff meetings prior to the particular seminar in which the material will be used. The T.A.'s answer the objectives which accompany the article and then hold a pseudo-seminar in which important aspects of the subject matter are pointed out and techniques for expressing these to the students are devised. The general programming of the seminar is finalized at this time and methods of prompting student feedback and interactions are also outlined.

In the actual seminars, the first order of business is to hold a feedback forum in which students and staff express their qualms and praises of the SCEP system. At this time positive alternates to the structures of the system

are introduced, considered and often times arranged. Then the class breaks up into separate groups of about seven students over which a single teaching apprentice presides. He administers a short quiz which ensures (hopefully) that students read the material. Following this a general discussion period is conducted in which students ask questions, present personal viewpoints, and demonstrate material mastery through individual and group presentations. Once these components of the discussion period have been completed, students are asked to write a short summary of the assignment including their thoughts about the topic indulged. Upon completion of this, the seminar is over. Seminar student grades reflect quiz performance and summary content as well as class contributions and demonstrations. Teaching apprentices award points on the short papers on the basis of the indicants and references to the concepts presented in the seminar.

For ten minutes during the course of the seminar, an advanced teaching apprentice monitors seminar interactions on such measures as number of student and T.A. initiated interactions, the number of positive and negative comments made, and the number of off-task interactions indulged. Teaching apprentices are given feedback over these aspects and this information is used by them to shape the course of the seminar interactions when necessary.

The general goal of the seminars is to allow for insight into the possible usages of the operant paradigm in applied real world situations on the part of the students; and to allow for actual practice of behavioral principles by the teaching apprentices in an educational setting. Students are encouraged to go on into the various upper level psychology courses at Western and are given an orientation to these in one of the seminar sessions.

In one of the more productively entertaining seminars, students were charged with choosing a partner. These two were to help each other select

a behavior to be changed and a specific modification procedure to utilize. These personalized self-modification programs were then reported to the rest of the class, who, with suggestions from the T.A., helped to work out any potential bugs. They devised graphs for recording and were instructed to take baseline data for one week and then implement the intervention proceedings for a two week period. Thus prepared the students went home ready to initiate their techniques for change.

The target behaviors selected by students ranged from belly-dancing to nail-biting but were most often studying or exercising. Reinforcers utilized for behavioral change varied from an opportunity to "get high" to a chance to spend time embroidering on a quilt; but most often the designs utilized TV time and avoidance of losing an opportunity to eat a meal as rewards. During baseline recordings an average student spent 1¼ hours per day on their target behaviors; while intervention proceedings were in effect 2¼ average student hours were spent daily on target behaviors. This is an increase in on-task performance of 80% during intervention implementation over the baseline rates. Generally, students reported that they were pleased with their self-mod programs and planned to continue them.

All in all, the SCEP I Seminars purport to turn students on to the variety of situations in which the principles of behavioral change are applicable, useful, and even preferrable over traditional modes; for it is here that many students have their first encounters with the possible situations in which operant theory can play a major role. We promote student involvement in these areas...striving to widen horizons and cultivate specific interests in behavior modification.

THE PSYCHOLOGY DORMITORY

In structuring the contemporary American University, educators have treated academic and living environments in a duolistic manner. While well-planned and creatively designed classroom experiences provide educational enrichment, an attitude of laise-faire often applies outside the classroom. In the past, this has been especially true of dormitory life. The psychology floors of Stinson Hall, a project being conducted in conjunction with the Student Centered Education Project, is attempting to coordinate extra-curricular activities with more formalized classroom material. In doing so, we hope to unify living and learning into a more integrated educational experience and narrow the needless gap between the classroom and everyday life.

Twenty beginning psychology students are living on the third and fourth floors of Stinson Hall. The students also elected to enroll in a six credit hour package consisting of two beginning psychology classes in the SCEP program. Students in the dorm like the idea of living with other students who share similar strong interests in the field of psychology.

The Student Centered Education Project is structured around daily quizzes and reading assignments and teaching apprentices are relied upon to administer daily quizzes and answer student questions over course material. Similarly, an important aspect of the dormitory project is the utilization of upperclass psychology students to orient freshmen students to the academic and social areas of college life. The primary duty of the residential apprentice teachers is to assist beginning freshmen with difficult psychology materials being covered in the SCEP classroom. One apprentice is available in the hall each weeknight for this purpose. The residential apprentice teachers also help plan and execute group activities in the dorm such as lectures, discussions, study sessions, dinners with professors, and field trips.

One of our regular activities which has been very successful is called "dinner with the doc" where a university faculty member comes to the dorm to share an evening meal with the students. The dinner-discussions have no strict format and the students are encouraged to discuss a wide range of topics with the visiting professor. We feel that from this type of student-professor interaction a large number of students are able to relate to faculty on a less formal level than can be achieved in the average classroom.

Another important aspect of the Dormitory Project is a student/professor discussion series which is held in the lounge of Stinson Hall. Visiting speakers usually university faculty, talk to the students about their particular interests and areas of work in the field of psychology. The informal format of the discussions seem to facilitate active student participation.

Another of the dormitory project's goals is to supplement student interests with related real life experiences. For instance, after reading Skinner's utopian novel, Walden II, students visited an experimental living community started by Dr. Roger Ulrich of Western's Psychology Department.

In addition to the previously mentioned activities, ten of the beginning psychology students in the dorm elected to become involved in a psychology seminar which is held weekly in the dorm. At each meeting, members of the seminar discuss concepts being covered in the SCEP classroom. Projects applying the principles of psychology are also conducted and evaluated by group members.

One such project conducted by students in the seminar was the Student Service Exchange. Members formed pairs and each student found areas in which they could trade a service or a skill. For instance, two hours of math tutoring might be exchanged for an equal amount of time for guitar lessons. Students exchanged a total of twenty hours of talent in one week. The Student Service Exchange was later implemented on a dorm-wide basis by three group members.

Students in the seminar also learned to design, execute and evaluate contingency contracts. Each student picked a behavior he would like to increase (like studying) or decrease (like smoking). Then a written contract was designed with another student who agreed to monitor the behavior of his partner. Reinforcing or punishing consequences, as specified in the contracts, were applied as members met or failed to meet designated goals. Members saw an average of 60% improvement on contracted behaviors in a two week span.

Overall, the students rated the psychology dormitory a success as an educational environment helping them to fulfill their educational goals. The freshmen students also felt the activities of the psychology floors helped create a sense of community.

In future semesters, the psychology dormitory project will continue. New activities and programs will be implemented on the basis of student feedback and initiative. We are optimistic about the continuation of living and learning in the psychology dorm at Western Michigan University.

SCEP II

Five semesters ago, in September of 1973, the Student Centered Education Project expanded from one to two course packages; SCEP I, consisting of two beginning psychology classes and a sequential SCEP II composed of three core psychology courses.

SCEP II is a package of courses open to undergraduates who have completed Psychology 150, the introductory course at Western, providing they have passed the course with a grade of "A". The primary focus of SCEP II is directed toward students interested in majoring or minoring in the human services area of psychology.

During the Winter semester 1975, the following books were employed in the three course curriculum: Behavior Modification in the Natural Environment by Tharp and Wetzel; Science and Human Behavior by B. F. Skinner; Principles of Behavior Modification by Bandura; Issues in the Analysis of Behavior by Malott, General and Snapper; along with supplementary materials and articles. Objectives corresponding with the course material were utilized to highlight the important aspects of the assigned material.

As one of the goals of SCEP II is to provide a learning environment of optimal value, an attendance/tardiness policy exists to ensure that all students are present at the beginning of class time so that any important announcements can be communicated. Secondly, and more important, the policy helps the students manage their study time effectively by requiring his/her attendance. While in class, the student is assured help with difficult material.

Students have a wide variety of options available upon arrival at the classrooms. They can study separately in study carrels; participate in small

student-discussion groups; or, they can ask questions and discuss the material with the on-duty Teaching Apprentice. (A Teaching Apprentice is a student who has completed SCEP II and demonstrated competent mastery of the material. The apprentice now serves to assist SCEP students with the course material.

Following an hour and a half study period, the students take a 20 point quiz made up of short answer essay questions. Upon completing the quiz, all students attend a special-activity session, where they participate in one of four organized events:

1) Each week the students meet with their corresponding lab instructors and assistants.
2) Attend a guest lecture generally given by someone within the psychology department.
3) View a psychology-related film.
4) Attend a "feedback forum" - a session where students meet with the SCEP II Undergraduate Assistants and discuss problems or misunderstandings occurring in the system. The feedback forum also provides a time when students are allowed to input their suggestions to improve the system.

Following the activity session, the students again study for approximately an hour and a half and then take another quiz at the end of this time. The class schedule follows this pattern five days a week.

The advantages inherent in the SCEP environment include the "positive verbal community" which develops as the students and staff cover the assigned material together. Students not only read the course material and answer the objectives, but they also have the chance to discuss the material and be corrected or rewarded accordingly. This verbal community has proved efficacious in producing students with extensive verbal repertoires in behavior analysis.

APPLIED LABORATORIES

Because experience often proves the best teacher, SCEP II students spend an average of one and one-half hours each afternoon working in the laboratory setting.

For those interested in the field of retardation and the handicapped, the Program for the Severely Mentally Impaired (PSMI) and the Kalamazoo Valley Multihandicap Center (KVMC) provide the student the with the opportunity to work as a para-professional with retarded and multiply handicapped children. Working in both a one-to-one situation and group situations, the students, in conjunction with program staff, are asked to specify the behavioral deficits of their clients (two clients per SCEP student), design behavior modification procedures to aleviate these deficits and evaluate the results of their intervention. These procedures and results are then prepared in a paper written according to the American Psychological Association format. Using advanced behavior technology, past student therapists have taught children such skills as reading, walking, dressing and spelling. Unlike many other situations where feedback can be much more long-term and erratic, the immediate feedback which comes with working with a child in a close situation, and the weekly monitoring done by the center staff, has made this one of the more popular labs in SCEP II.

Students interested in education are encouraged to participate in the SCEP II Educational Technology Laboratory which provides the student with valuable experience in both the preparation of academic materials, and the design and systems maintenance of the classroom. Working with past SCEP students who are now veteran staff members, each participant serves as a Teaching Apprentice

for a section of one of the department's two introductory Psychology courses (SCEP I or regular Psychology 150 and 151). In addition to learning about classroom management, the student Teaching Apprentices spend several hours each week learning how to write and validate behavioral objectives and are responsible for conducting research within their system. Their research is written up in a lab report according to Systems Analysis Design.

Though the labs may vary in environment and subject matter, both contain several important similarities:

First, each laboratory program is designed to be a total research experience. Students are not only required to collect experimental data, but are also required to design and report the results of their experiments. The research papers required in both laboratory settings teach students how to present and evaluate experimental data. Students also acquire skills in analyzing the work of other researchers who have published studies similar to those the students are conducting.

Second, the entire laboratory program is a continually changing system. Major and minor alterations are constantly being made as feedback indicates that changes are needed. The use of such feedback has been crucial to the success of the lab program. Four years ago, the only setting open to undergraduate psychology students was an experimental animal laboratory. The development of the PSMI/KVMC and Educational Technology laboratories has been due to participant feedback and initiative.

Third, all laboratories are staffed and run by former students. We have found that advanced undergraduate and graduate students are quite capable of running the programs as well as suggesting and instituting innovative change.

Fourth, the SCEP II labs are not the final opportunity for research. Students interested in further research may continue their work through more advanced labs which are currently being offered within the department. Also, students have opportunities to become Advanced Teaching Apprentices and Undergraduate Assistants not only in SCEP, but in other psychology courses.

Finally, and perhaps most important, is the fact that the settings are relevant to the rest of the SCEP II curriculum. During past semesters, an overwhelming majority of the students have stated that the laboratory experience has helped them to better understand and conceptualize the principles of behavior analysis which they study in the classroom.

THE STAFF

Many of the current procedures and operations in SCEP II would not be possible without the help of a well-trained and cooperative staff. Over the past few semesters, a staff hierarchy has developed in which responsibilities and duties are specified according to one's position in this hierarchy.

The teaching apprentices have the most direct contact with the students and are responsible for supplying the students with important information, clarifications and explanations of the material to be covered. Other duties include quiz grading and recording, monitoring classrooms and aid in decisions concerning modifications of the system. Teaching Apprentice's are selected on the basis of behaviors demonstrating excellent mastery of the material as students the previous semester.

Serving as quality checks of the teaching apprentices and assistant's work are the Advanced Teaching Apprentices. These people, are chosen on the basis of high caliber performance as teaching apprentices the prior semester. The major duties of an advanced teaching apprentice include the monitoring of teaching apprentice performance, bookkeeping, supervision of consistency meetings and special responsibilities such as organization of extra-curricular student activities.

The primary responsibility of an undergraduate assistant is to insure the efficient functioning of the entire system. This basically entails quiz writing, staff monitoring, procedural change and implementation, inter-university interactions and material development.

The graduate assistant monitors the performance of the undergrad assistants and maintains close contact with the faculty and programs throughout the university.

This semester, two faculty members served as faculty advisors for SCEP II: Dr. Paul T. Mountjoy and Dr. Richard W. Malott, originator of the SCEP system act as supervisors of all procedural changes and implementations for the system. Teaching Apprentices are required to work a two hour shift each day. They serve as either monitors or graders. Monitors are responsible for taking attendance, passing back graded quizzes, making announcements, answering student questions over material, participating in group discussions and administering and monitoring the quizzes. To allow for immediate feedback on their quiz performance, one teaching apprentice is responsible for posting an answer key which the students can read after they have handed in the quiz. Grading teaching apprentices are responsible for the grading of quizzes, posting scores and computing an error analysis on each question. To insure consistency, the grading advanced teaching apprentice is responsible for regrading two quizzes of each teaching apprentice. In order to provide students with consistent and accurate answers to questions, all teaching apprentices participate in a consistency meeting upon arrival. The meeting is led by a designated apprentice and supervised by an advanced teaching apprentice. During these meetings, the monitoring teaching apprentices review the assigned material and study objectives along with the corresponding quiz and answer key. Modifications in the answer key and quiz may be made at this time. The consistency meeting for the grading teaching apprentices entails a review of the answer key and the quiz to be graded in order to affect consistent grading and adequate feedback on the student's answers.

All staff members are required to fill out a self-monitoring sheet on which their duties are specified. As the duties are completed, the person records it's completion on the list. This system allows for inter-staff monitoring in which all members are responsible for maintenance of behaviors at all levels of the hierarchy. This system has proven efficacious for maintaining the staff performance at a high level.

A staff meeting is held once a week in which possible changes in procedures are discussed and feedback is supplied concerning system operations.

An assistants meeting is held weekly. Both major and minor system difficulties are discussed along with possible methods of modification. This meeting serves primarily as a period of communication between assistant's dealing with observations they have made throughout the week.

Meetings are held frequently between faculty advisors and the assistants. The communication of the existing procedures and working implementations are related to the advisor at this time. Along with consideration of the present systems is the discussion and planning of future operations.

"Experimental procedures to effect an optimal learning environment are constantly being implemented, tested and evaluated." This semester some of these designs include: behavioral contracting of students to improve quiz scores and study habits. This was done through a staff effort, headed by an advanced teaching apprentice. Some of the behaviors contracted included the writing out of study objectives the night before, taking a practice test, or participation in group study. Another design was a student expert system in which students who have shown superior mastery of the materials serve as teaching apprentices for a day. These people are designated as student "experts" and aid the teaching apprentices in participation in student study groups and answering student questions. A third implementation this semester was a self-monitoring system in which members of the staff monitor their own performance, and also monitor the performance of members above and below them in the staff hierarchy. This is accomplished through a positive monitoring system, points contingent on the completion of designated duties.

The Student Centered Education Project is a tight system of high educational impact. It is under continual evaluation and changes are based for the most part, on student input and feedback.